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(54) A safety label and a device for its manufacture

(57) The label includes a radio-frequency tag fitted between two sheets of cardboard that are stuck together by the opposing sides, with these elements forming a single body. The device used for the manufacture of these labels includes some accessories being attached to a rotary printing machine, with the said accessories

being: a mechanism for guiding and marking the strip of cardboard that has been printed in the same rotary machine, one labelling machine that positions the tags on the strip, a glue dispenser, a guide for folding the strip and some pressure rollers. The obtained labels are used for marking and protection against the robbery of products for their sale.

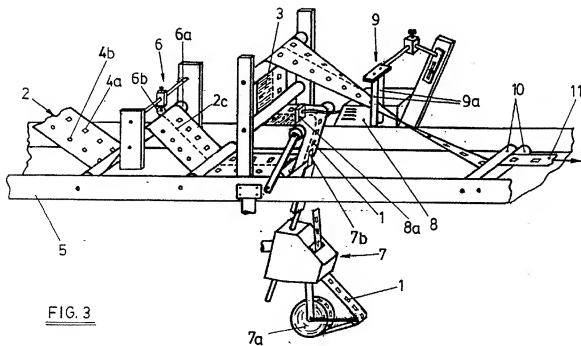


FIG. 3

that the two halves of the non-printed side remain opposite one another and e) pressure rollers that press the previously folded strip thereby achieving the final sticking of the opposite sides.

These accessories are attached to the printing machine between the printing and stamping or final adjustment areas, in such a way that the printed strip can pass through all of them, thereby obtaining a number of labels fitted with the corresponding radio-frequency tag and between which there remains a small separation.

In the stamping and final adjustment area, which is usual in rotary printing machines, the excess material is sliced off from the sides of the labels, including the fold, and some cross notch cuts are made in the intermediate separations which make it easier to separate the labels later and some stamped marks. These marks allow the individual detection of the labels by the other machines currently used, such as reprinters or guillotines, so that the latter may, respectively, print variable information (price, type of currency, use by dates, etc.) in a certain area of the labels, or to perform precise cuts in order to achieve their total separation, thereby handing them over one by one.

The addition of the aforementioned accessories to a conventional rotary printing machine, for the manufacture of the safety label, provides important advantages, such as the possibility of using a cardboard with a much smaller substance than those used in the manufacture of conventional labels, since, when carrying out the crosswise folding of the strip, the labels obtained will have double the thickness than that of the initial strip.

Another of the advantages determined by the use of these accessories is that both the front and the back of the label are printed simultaneously on the same side of the strip of cardboard, which allows all the colours available in the machine to be used for both prints.

The accessories mentioned allow the simultaneous manufacture of two or more series of labels to be performed, thereby increasing productivity and providing that the necessary band width is accepted by the rotary printing machine; in this case, the rotary machine must simultaneously print the fronts and the sides on the backs of the labels to be produced, in such a way that when the strip is folded by the central area, the said prints shall remain in areas that coincide with one another and by the outer sides of the labels, with it also being necessary to include a number of labelling machines in parallel equal to that of the series of labels to be manufactured, so that they will all have the corresponding radio-frequency tags.

DESCRIPTION OF THE DRAWINGS

In order to complete the description that is being made and so as to help towards a better understanding of the characteristics of the invention, the present descriptive report comes with a set of non limiting drawings which are an integrated part thereof, in which for illus-

tration purposes only, the following has been shown:

- Figure 1, a perspective view of the safety label.
- Figure 2, a elevation view of the label, with a scaled cross-section of parallel stretches, in which the different elements that form it may be seen.
- Figure 3, a perspective view of the accessories that are mounted onto the printing machine and of a strip of printed cardboard passing through them.

PREFERRED EMBODIMENT OF THE INVENTION

As may be observed in the referred Figures, the label, shown in Figures 1 and 2, includes a radio-frequency tag (1) placed between two sheets of cardboard (2a and 2b) which form the front and the back of the label and which are attached by the opposing sides by means of a layer of adhesive (3), in such a way that the tag (1) and the sheets (2a and 2b) form a single body.

As is seen in Figure 2, the tag (1) has a smaller surface area than the sheets of cardboard (2a and 2b), thereby remaining totally hidden between them.

The sheets (2a and 2b) are obtained from a strip of cardboard (2) provided with two prints (4a and 4b) that remain positioned, respectively, at the front and at the back of the label when the latter is shaped.

The prints (4a and 4b) are carried out in a rotary printing machine (5) of which, since it is a conventional one, only the area of the frame has been shown over which the accessories are attached that are necessary for producing the labels.

These accessories are mounted onto the machine (5), below the printing area, in such a way that the strip (2) is printed before passing through the former.

These accessories are: a mechanism (6) for guiding and marking the strip (2), a labelling machine (7), an adhesive dispenser (8), a folding guide (9) for the strip (2) and roller presses (10).

The mechanism (6) for guiding and marking includes a roller (6a), over which the printed strip (2) is guided, and a ruler (6b) which acts against the central area of the strip (2) thereby making a lengthways line of holes in it (2c).

The labelling machine (7) is the one in charge of positioning the successive radio-frequency tags (1) over the non-printed side of the strip, in such a way that they remain centred with respect to each one of the prints (4a).

The tags (1) are initially stuck to a supporting coil (7a) from which they are separated when the support passes through a dispensing edge (7b) included in the machine (7).

The glue dispenser (8) has an applicator nozzle (8a) which drops the adhesive layer (3) onto one of the halves of the non-printed side of the strip of cardboard (2).

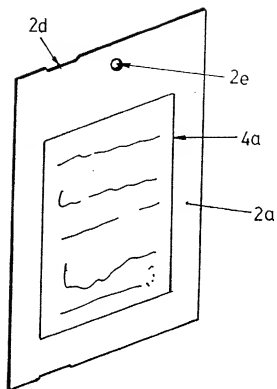


FIG. 1

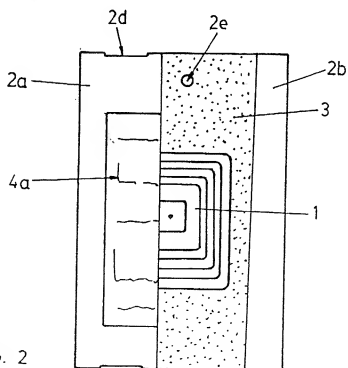


FIG. 2



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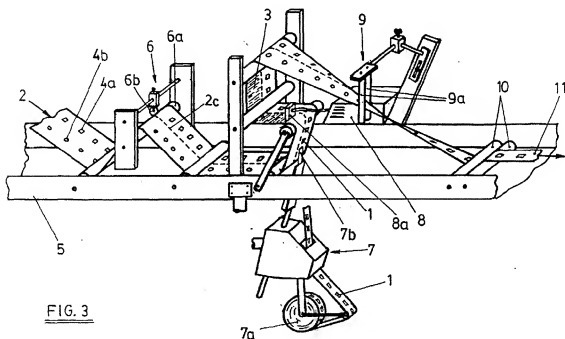


FIG. 3

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 20 0266

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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16-09-1999

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For more details about this annex - see Official Journal of the European Patent Office, No. 12/82